

REMARKS

This is in response to the Official Action of February 21, 2003. Entry of the Amendment and favorable consideration is respectfully requested.

First, the applicant reaffirms the provisional election to prosecute claims 1-5, 9-14, and 28-32 as previously made.

However, it is respectfully requested that the Examiner reconsider the requirement for restriction, in particular, the restriction of Group III, claims 15-19.

Claim 15, the parent claim of this series, has been amended to closely correspond to the structure that is used in performing the method of claim 1. For example, claim 15 includes separated impactor components that form separated impaction chambers. The separate chambers each have an impaction surface. The chambers are supported on a support that has a plurality of receptacles that will receive the impactor components, and the cover overlies the components for processing, including the introduction of solvents into the chambers. The claims that depend from claim 15 are claims generally paralleling the method claims, and it is believed that the method and apparatus are so intertwined that they are properly related in the same case.

Withdrawal of Groups II, IV and V is not contested. However, it is respectfully requested that Group III be included with Group I for this examination process.

In regard to the rejection on the prior art, claims 1-5, 9-14 and 28-32 were all rejected as being anticipated by Call et al., U.S. Patent No. 6,267,016.

The Call device is sort of an unusual machine and is not a classifying impactor, it is respectfully submitted. It does not have what can be called separated impaction chambers, as now specifically stated in the present claims. It shows a single large chamber that does not teach anything about classification onto separate impaction surfaces where there is a classification

as to size. In fact, in the abstract of Call et al., it shows that particles are separated from a gaseous fluid by providing a "rotating surface that impacts the particulates", and then it goes on to say that the particulates also impact on other surfaces within the cavity. Then they are all washed away. There is no teaching of a cascade impactor or separated impaction plates that classify materials as to size and then which can be simultaneously, and separately, processed with a solvent to obtain a sample and thus obtaining information about components of interest for particles on each impactor plate.

In fact, the device shown in the Call et al. Patent has a fan-shaped rotor that will produce a centrifugal fan effect when this means particles will be flung outwardly against the sides. The same chamber that is used for impaction is then sprayed with water that is introduced into the center of the chamber. It is merely a washing out of the particles in the chamber that is done. There is no indication that the particulates are separately classified as to size and then treated.

It is also noted that the liquid that is introduced into the chamber carrying the impeller for washing is removed from the bottle that collects the liquid from previously impacted particles. The Call et al. device does not contain all of the elements of the present claims or render them obvious. The precise method of separating, isolating and separately analyzing the particles in each of the plurality of chambers formed with impaction surfaces that classify particles as to size, is not disclosed in Call et al. Further, the step of several separated chambers at once is not present in Call et al.

In particular, claim 1 has been amended to clarify these features by providing a plurality of impactor components that are separated and enclosed, and a plurality of the enclosures containing the impaction surfaces carrying particles

are supported as a group, and then the solvent in each impactor is agitated by moving the support for the impactor components simultaneously.

The other steps in the dependent claims are also designed for separate analyzation of impacted particles. Claim 2 indicates that the samples are transferred to vials for analyzation. Claim 3 includes the agitating of the solvent in all of the separated enclosures by rocking the support, to ensure that there is adequate dissolution. Claims 4 and 5 relate to the washing and drying, where the plurality of individual impaction surfaces are simultaneously washed while in the support and also then dried with a flow of gas.

Claim 9 includes the separated enclosed chambers on a common carrier in which the solvent is introduced and agitating all of the enclosed chambers that carry separated impaction surfaces simultaneously to dissolve the particles on the surfaces. Further, claim 9 includes providing the fluid connections to each of the enclosed chambers, so that the solvents can be introduced individually as well, and the fluid connections can be used for other processing. Thus, since Call et al. does not teach a plurality of enclosed chambers that are processed as a group, for the reasons set forth in connection with claim 1, it is believed claim 9 is allowable. In claim 10, a sample is removed from each of the chambers, and claim 11 includes washing. Further, claim 12 includes a method where the chambers are defined as cups that have flanges supported on a carrier. There is absolutely no suggestion of supporting any item on a carrier using flanges on a cup that has an impaction surface in the Call et al. Patent. Call et al. merely has a bottle that connects to one chamber and there is a flushing water going through the impaction chamber itself into the bottle.

Claims 28 and 29 define processes which are absolutely remote from the Call et al. patent, because the Call et al.

patent merely flushes through a used liquid that is from a previous flushing of the same chamber. Call et al. has no suggestion of adding the solvents in a particular way into individual separated chambers that are provided, nor providing the other types of vibration on the sample acquisition methods.

Thus, it is respectfully submitted that the specific steps that are provided in claims 28-32 are not in any way suggested, and certainly not anticipated because they are not present in the teachings of the Call et al. patent.

In view of the differentiation in the claims, it is believed that the method claims in Group 1 are allowable.

Again, also, apparatus claim 15 has been amended to parallel claim 1, and is believed allowable therewith for the same reasons. Also, it is respectfully believed that claims 15-18 should be maintained in this application.

Favorable action is respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

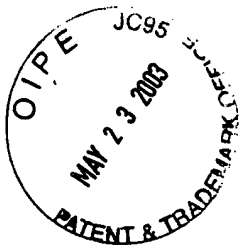
Respectfully submitted,

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MARKED-UP VERSION OF REPLACEMENT CLAIMS

Please amend claims 1-3, 9-10, 12, 15-18, 28 and 32 as follows:

1. (Amended) A process for obtaining samples ~~effor~~ analyzation from a cascade impactor comprising providing a plurality of impactor components having impactation surfaces carrying particles that have been classified, supporting the plurality of impactor components ~~inon~~ a support, such that the impactor surfaces of the plurality of impactor components are separated and enclosed to form separate enclosures, injecting a solvent solution into each of the plurality of enclosures containing an ~~impacter~~ impactation surface, carrying particles agitating the solvent applied on each separated and enclosed surface by moving the support so that athe plurality of the separated ~~impacter~~ impactation surfaces are agitated simultaneously, and removing a desired amount of liquid for a sample from each separate enclosure.

3. (Amended) The method of claim 1, including agitating the solvent in all of the separate enclosures by rocking the support for the plurality of impactor ~~surfaes~~ components.

9. (Amended) A method of obtaining samples from a plurality of separated impactation surfaces on which classified particles have been deposited, comprising supporting a plurality of the impactation surfaces, each in a separate enclosed chambers on a common carrier, introducing a solvent into each of the enclosed chambers, agitating the solvent in all of the enclosed chambers simultaneously to dissolve particles ~~held on the impactation surfaces, the carrier supporting a plurality of the impactation surfaces,~~ and providing separate fluid connections to each of the

enclosed chambers for the impaction surfaces for the introduction of the solvent.

10.(Amended) The method of claim 9, including removing a sample from each of the chambers held on the ~~support~~carrier.

12.(Amended) The method of claim 9, wherein each of said chambers areis formed by a cup having flanges around the edges thereof ~~supported on the carrier~~, the impaction surfaces being on the interior of the cup, supporting the flanges on the carrier and providing a ~~cover~~manifold overlying the plurality of cups on the ~~support~~carrier, ~~said cover having and the step of providing~~ fluid connections comprising providing separate openings in said manifold to access each cup separately for introducing solvent and removing samples from the respective cups.

15.(Amended) An apparatus for aiding in the dissolution of particles held on impaction surfaces, after the particles have been classified as to size in an impactor having separated impaction surfaces, comprising a support having a plurality of receptacles for receiving the separated impactor components having impaction surfaces carrying the particles, said support being mounted for movement, and the support having an overlying cover including openings for introducing a solvent into each impactor component to immerse each of the impaction surfaces.

16.(Amended) The apparatus of claim 15, wherein said support holds individual impactor cups forming the impactor components having impaction surfaces on the interior thereof, and a clamp to clamp the cover against the cups in position in receptacles of the support.

17.(Amended) The apparatus of claim 15, wherein each of the cups impactor components comprises a cup that has a flange around the periphery thereof, the support comprising a tray having openings to permit a majority of each of the cups to pass through the respective openings and the tray comprising the support for the respective cup on the cup flange, ~~the support~~ a housing having openings in an upper surface for supporting the tray with the cups protruding into the openings of the ~~support~~ housing, the cover engaging the flanges of the cups and holding the cups, the tray, and the ~~support~~ housing as a unit.

18.(Amended) The apparatus of claim 17 and seals around the cups engaging the flange and sealing each of the cups relative to the cover.

28.(Amended) A method of processing particles held on impactor plates in separated chambers comprising selecting one of the methods of adding solvents to each chamber consisting of manual pipetting and automatic pipetting; selecting one of the methods of dissolution of particles in the solvent comprising using one of the group consisting of gentle agitation, mechanical vibration, ultrasonic vibration, recirculation, and direct contact rubbing; acquiring a samples from each chamber after the dissolution step by one of the methods of sample acquisition consisting of a manual syringe, an automatic syringe, or decanting liquid from the cup from the dissolved sample; and thereafter disposing of waste sample solutions in each chamber and, washing and drying the impactor plates.

32.(Amended) The method of claim 28, wherein drying comprising one of the group consisting of manual drying, hot air drying, and hot nitrogen enriched air drying.